



# ICAO ENGINE nvPM EMISSIONS DATA SHEET

## SUBSONIC ENGINES

ENGINE IDENTIFICATION: AS907-3-1E-A2 (HTF7500E) BYPASS RATIO (-): 4.2  
 UNIQUE ID NUMBER: 01P14HN015 PRESSURE RATIO  $\pi_{co}$  (-): 22.3  
 COMBUSTOR: SABER-1  
 ENGINE TYPE: MTF RATED OUTPUT  $F_{oo}$  (kN): 31.6

### REGULATORY DATA

CHARACTERISTIC VALUES:	$LTO_{mass}/F_{oo}$ (mg/kN)	$LTO_{num}/F_{oo}$ (particles/kN)	NVPM MASS CONCENTRATION ( $\mu\text{g}/\text{m}^3$ )
LTO/ $F_{oo}$ AND MAX $nvPM_{mass}$	704.5	6.73E+15	1906
AS % OF CAEP/10 LIMIT	-	-	14.3
AS % OF CAEP/11 LIMIT (InP)	17.8	29.1	
AS % OF CAEP/11 LIMIT (NT)	68.2	54.5	

### MEASURED DATA

MODE	POWER SETTING (% $F_{oo}$ )	TIME minutes	FUEL FLOW kg/s	EMISSIONS INDICES*		NVPM MASS CONCENTRATION PEAK $nvPM_{mass}$ ( $\mu\text{g}/\text{m}^3$ )
				$EI_{mass}$ (mg/kg)	$EI_{num}$ (particles/kg)	
TAKE-OFF	100	0.7	0.349	300.0	1.62E+15	
CLIMB OUT	85	2.2	0.289	280.6	2.13E+15	
APPROACH	30	4.0	0.102	6.1	2.85E+14	
IDLE	7	26.0	0.049	9.9	5.39E+14	
LTO TOTAL (kg, mg, number of particles)			154	16020	1.53E+17	-
NUMBER OF ENGINES				1	1	1
NUMBER OF TESTS				4	4	4
AVERAGE LTO/ $F_{oo}$ VALUES (mg/kN, particles/kN)				506.8	4.84E+15	-
MAX EI VALUES (mg/kg, particles/kg) AND MAX MASS CONC. ( $\mu\text{g}/\text{m}^3$ )				302.8	2.19E+15	1481

\* Emissions Indices are corrected for thermophoretic loss and fuel hydrogen content

### DATA FOR EMISSIONS INVENTORIES (ESTIMATIONS FOR ENGINE EXIT PLANE VALUES)

MODE	POWER SETTING (% $F_{oo}$ )	CORRECTED EMISSIONS INDICES	
		$EI_{mass_{sl}}$ (mg/kg)	$EI_{num_{sl}}$ (particles/kg)
TAKE-OFF	100	354.0	4.58E+15
CLIMB OUT	85	333.9	6.36E+15
APPROACH	30	10.3	2.21E+15
IDLE	7	18.0	4.77E+15

### AMBIENT CONDITIONS

	From	To	FUEL	
BAROMETER (kPa)	96.6	97.5	HEAT OF COMBUSTION (MJ/kg)	43.05
TEMPERATURE (K)	289.0	300.0	HYDROGEN CONTENT (%mass)	13.66
HUMIDITY (kg water/kg dry air)	0.0020	0.0030	AROMATICS CONTENT (%vol)	16.7
			NAPHTHALENE CONTENT (%vol)	1.24
			SULPHUR CONTENT (ppm by mass)	744

MANUFACTURER: Honeywell  
 TEST ORGANIZATION: Honeywell  
 TEST LOCATION: Queen Creek, AZ  
 TEST DATES: 04/12/2015-07/12/2015

### REMARKS

- Reference: Honeywell Report 21-16865 Summary Report: Compliance to International Regulations of Non-Volatile Pa: